

NOTES

ASSUMED LIVE LOAD ----- HL-93

THE RESIDENT ENGINEER SHALL CHECK THE LENGTH OF CULVERT BEFORE STAKING IT OUT TO MAKE CERTAIN THAT IT WILL PROPERLY TAKE CARE OF THE FILL.

THE EXISTING STRUCTURE CONSISTING OF A SINGLE 22.5' CONCRETE ARCH WITH A CLEAR ROADWAY WIDTH OF 18.5', SUPPORTED BY CONCRETE ABUTMENTS AND WINGWALLS, AND LOCATED AT THE PROPOSED STRUCTURE SHALL BE REMOVED. THE EXISTING BRIDGE IS PRESENTLY POSTED BELOW THE LEGAL LIMIT. SHOULD THE STRUCTURAL INTEGRITY OF THE BRIDGE FURTHER DETERIORATE, THIS LOAD LIMITATION MAY BE REDUCED AS FOUND NECESSARY DURING THE LIFE OF THE PROJECT.

REMOVAL OF THE EXISTING BRIDGE SHALL BE PERFORMED SO AS NOT TO ALLOW DEBRIS TO FALL INTO THE WATER. THE CONTRACTOR SHALL REMOVE THE BRIDGE AND SUBMIT PLANS FOR DEMOLITION IN ACCORDANCE WITH ARTICLE 402-2 OF THE STANDARD SPECIFICATIONS.

FOR OTHER DESIGN DATA AND NOTES, SEE SHEET SN.

3" Ø WEEP HOLES INDICATED TO BE IN ACCORDANCE WITH THE SPECIFICATIONS.

CONCRETE IN HEADWALLS TO BE POURED IN THE FOLLOWING ORDER:

1. WING FOOTINGS INCLUDING 4" OF ALL VERTICAL WALLS.
2. REMAINING PORTIONS OF THE WALLS AND WINGS FULL HEIGHT.

FOR SUBMITTAL OF WORKING DRAWINGS, SEE SPECIAL PROVISIONS.

FOR CRANE SAFETY, SEE SPECIAL PROVISIONS.

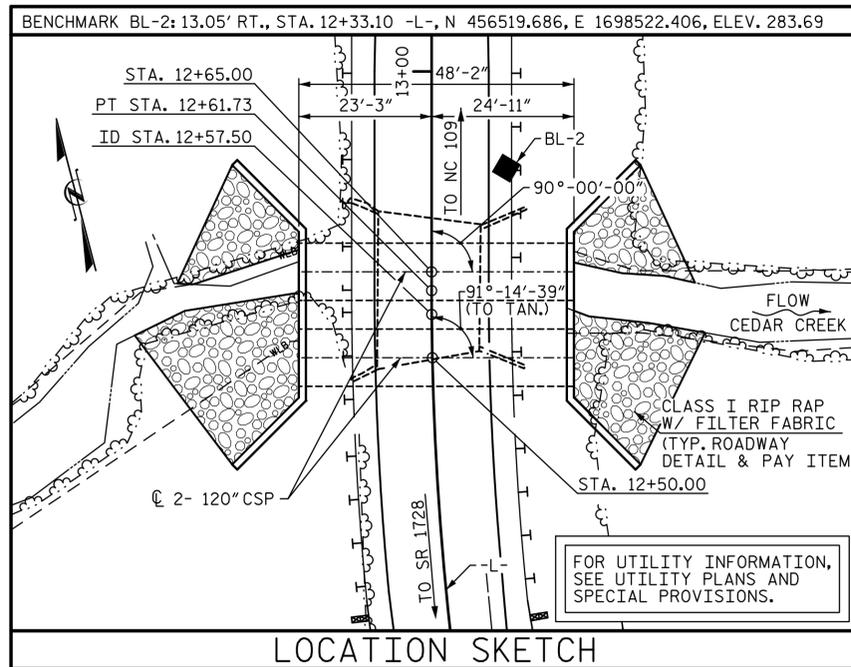
FOR GROUT FOR STRUCTURES, SEE SPECIAL PROVISIONS.

A MINIMUM BEARING OF 3,500 PSF SHALL BE VERIFIED PRIOR TO CONSTRUCTION. IF NECESSARY, CONTRACTOR SHALL PREPARE AND/OR MAKE GROUND MODIFICATIONS IN ORDER TO SATISFY MINIMUM BEARING PRESSURE.

NO WORK SHALL BE DONE ON THE CSP CULVERT UNTIL THE AREA OF THE CULVERT HAS BEEN UNDERCUT AND UNSUITABLE MATERIAL REPLACED WITH SUITABLE MATERIAL, PROPERLY COMPACTED TO THE ELEVATION OF THE BOTTOM OF THE PROPOSED BEDDING MATERIAL. THE LIMITS OF THE UNDERCUT EXCAVATION SHALL BE AT LEAST THE LIMITS OF THE CULVERT INCLUDING THE HEADWALLS.

EXCAVATE 1 FOOT BELOW FOOTING AND REPLACE WITH FOUNDATION CONDITIONING MATERIAL IN ACCORDANCE WITH ARTICLE 414 OF THE STANDARD SPECIFICATIONS.

FOR CULVERT DIVERSION DETAILS AND PAY ITEM, SEE EROSION CONTROL PLANS.



HYDRAULIC DATA

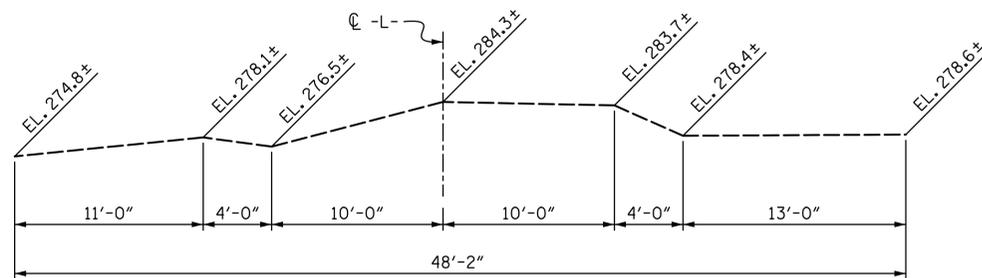
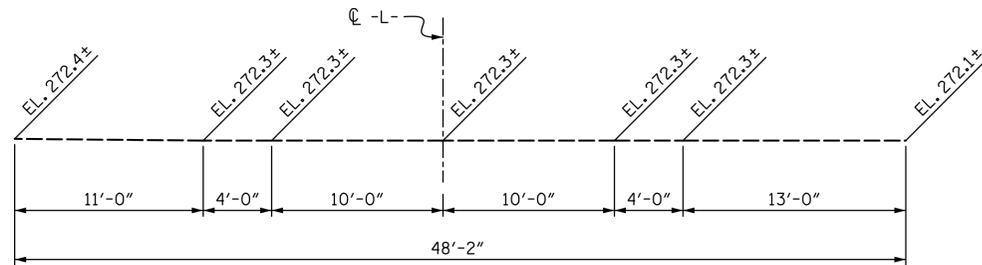
DESIGN DISCHARGE: ----- 770 CFS
 FREQUENCY OF DESIGN FLOOD: ----- 25 YRS.
 DESIGN HIGH WATER ELEVATION: ----- 281.84
 DRAINAGE AREA: ----- 2.1 SQ. MI.
 BASIC DISCHARGE (Q100): ----- 1,197 CFS
 BASIC HIGH WATER ELEVATION: ----- 284.70

OVERTOPPING FLOOD DATA

OVERTOPPING DISCHARGE: ----- 2,000+ CFS
 FREQUENCY OF OVERTOPPING FLOOD: ----- 500+ YRS.
 OVERTOPPING FLOOD ELEVATION: ----- 285.3

GRADE DATA

GRADE POINT ELEVATION @
 STA. 12+57.50 -L- ----- 285.41
 BED ELEVATION @
 STA. 12+57.50 -L- ----- 271.25
 ROADWAY FILL SLOPES ----- 2:1 (MAX)



TOTAL STRUCTURE QUANTITIES	
REMOVAL OF EXISTING STRUCTURE AT STA 12+57.50	LUMP SUM
CULVERT EXCAVATION STA 12+57.50	LUMP SUM
120" C.S. PIPE CULVERTS, 0.168" THICK	96.3 LF
FOUNDATION CONDITIONING MATERIAL, BOX CULVERT TOTAL:	70 TONS
CLASS A CONCRETE	
WINGS & HEADWALL:	94.8 C.Y.
REINFORCING STEEL	
WINGS & HEADWALL:	8,083 LBS.

I HEREBY CERTIFY THESE PLANS ARE THE AS-BUILT PLANS

DRAWN BY : LEM DATE : 08-14
 CHECKED BY : MLO DATE : 08-14
 DESIGN ENGINEER OF RECORD : BMC DATE : 08-14

1/14/2016
 R:\Structures\06N\Finals\01 - Location Sketch & Notes.dgn
 Jgriscom

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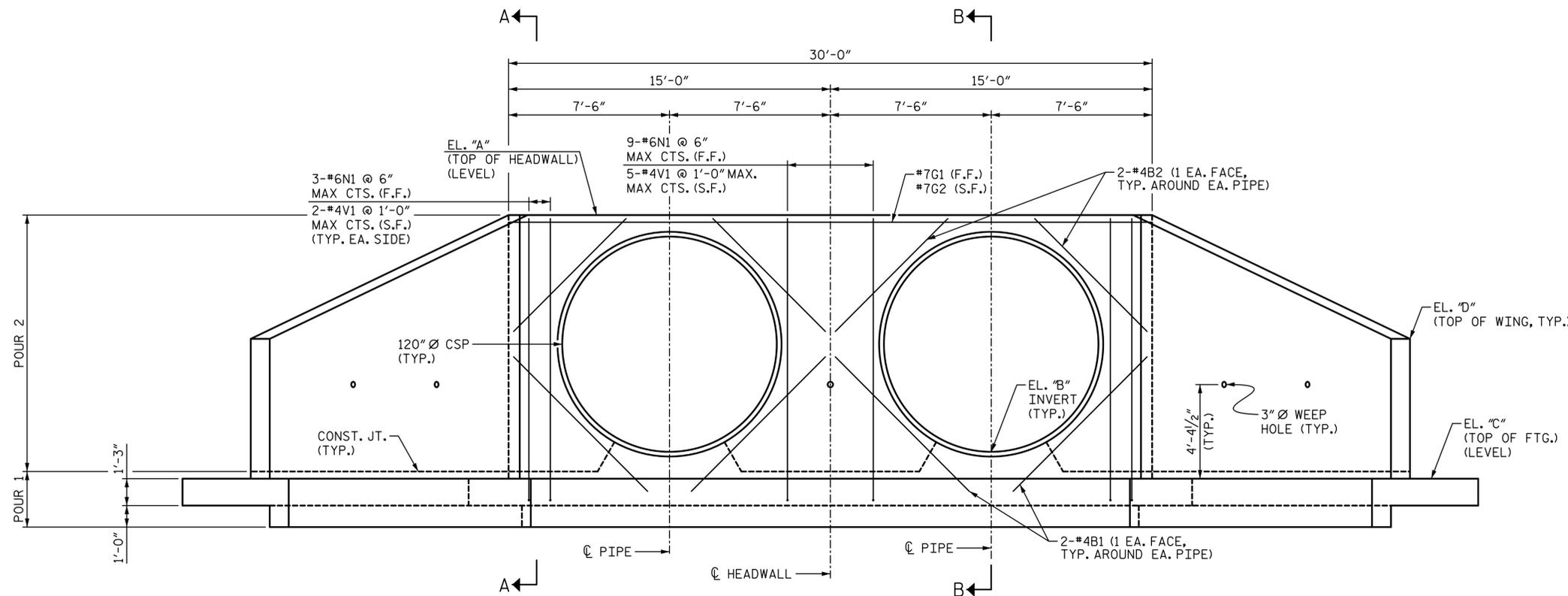
STV ENGINEERS, INC.
 900 West Trade St., Suite 715
 Charlotte, NC 28202
 NC License Number F-0991

REVISIONS				SHEET NO.		
NO.	BY:	DATE:	NO.	BY:	DATE:	C-1
1			3			TOTAL SHEETS
2			4			4

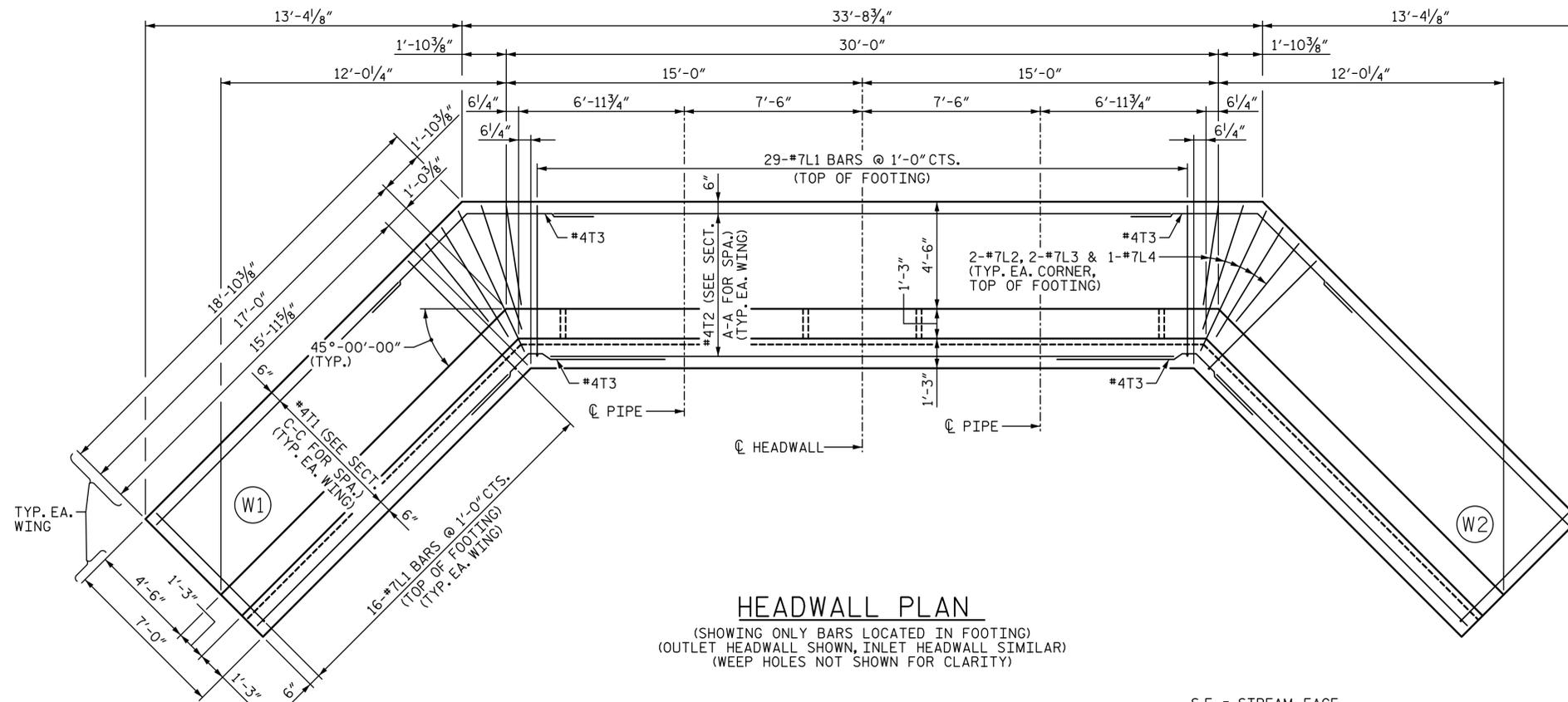
PROJECT NO. 17BP.10.R.69
ANSON COUNTY
 STATION: 12+57.50 -L-
 SHEET 1 OF 3 REPLACES BRIDGE NO. 016

STATE OF NORTH CAROLINA
 DEPARTMENT OF TRANSPORTATION
 RALEIGH

DOUBLE 120" DIA. PIPE CONCRETE HEADWALL 90° SKEW



HEADWALL ELEVATION
(SHOWING ONLY BARS LOCATED IN WALL PORTION)
(LOOKING TOWARD OUTLET HEADWALL, INLET HEADWALL SIMILAR)



HEADWALL PLAN
(SHOWING ONLY BARS LOCATED IN FOOTING)
(OUTLET HEADWALL SHOWN, INLET HEADWALL SIMILAR)
(WEEP HOLES NOT SHOWN FOR CLARITY)

S.F. = STREAM FACE
F.F. = FILL FACE

NOTES:

- SEE SHEET 1 OF 3 FOR ADDITIONAL NOTES.
- THE 5-#7 "L" BARS SPLAYED IN EACH CORNER OF THE FOOTING SHALL BE PLACED AS SHOWN AND HAVE A SPACING OF APPROXIMATELY 1'-0" BETWEEN BARS.
- #4 "T" BARS IN FOOTING SHALL HAVE A MIN. SPLICE LENGTH OF 1'-9".
- FOR REINFORCING IN WINGS, SEE SHEET 3 OF 3.

LOCATION	TOP OF HEADWALL EL. "A"	INVERT EL. "B"	TOP OF FTG. EL. "C"	TOP OF WING EL. "D"
INLET HEADWALL	282.48	271.48	270.23	276.73
OUTLET HEADWALL	282.00	271.00	269.75	276.25

NOTE: CONTRACTOR SHALL FIELD VERIFY ELEVATIONS.

PROJECT NO. 17BP.10.R.69
ANSON COUNTY
STATION: 12+57.50 -L-

SHEET 2 OF 3

STATE OF NORTH CAROLINA
DEPARTMENT OF TRANSPORTATION
RALEIGH

**DOUBLE 120" DIA. PIPE
CONCRETE HEADWALL
90° SKEW**



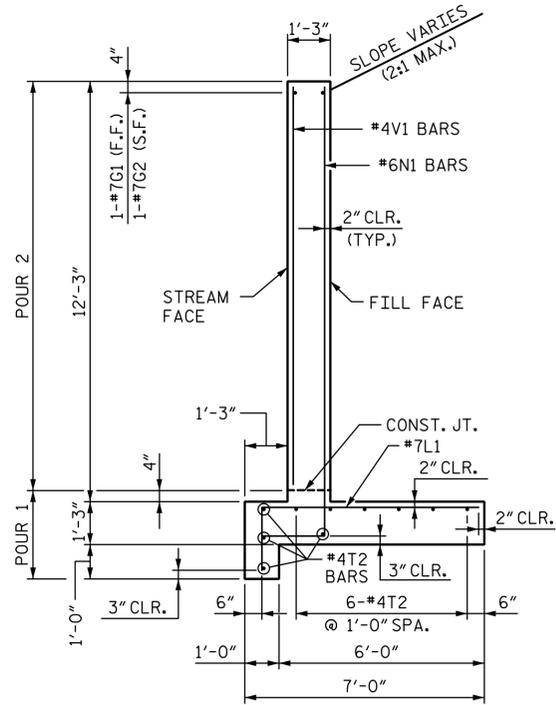
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DESIGN ENGINEER OF RECORD : BMC DATE : 08-14

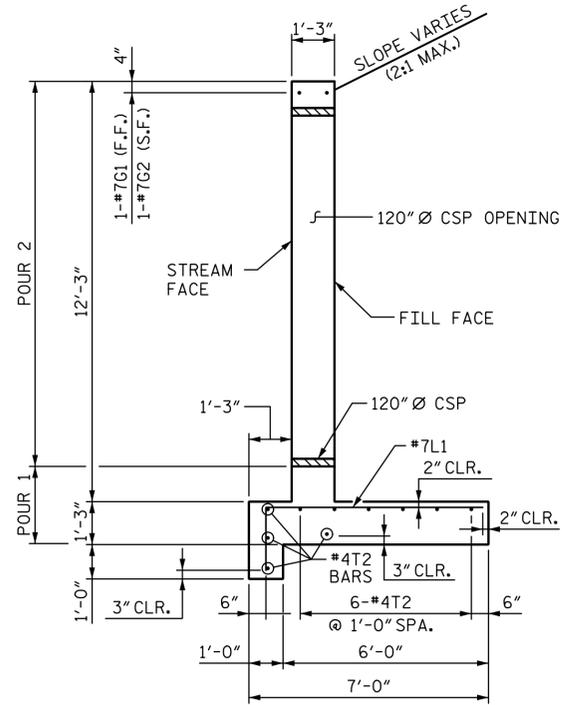
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SECTION A-A

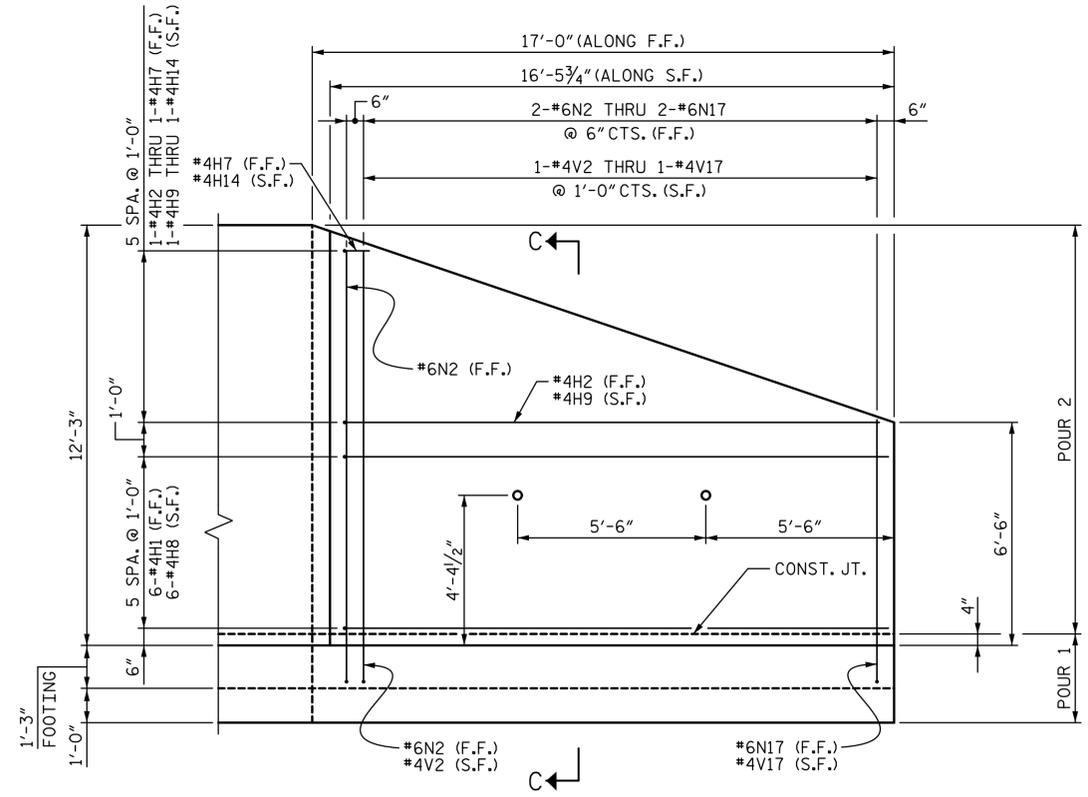
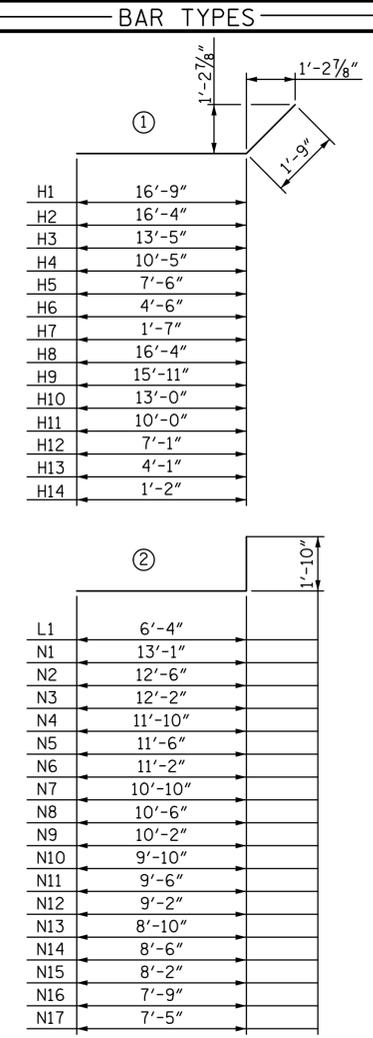


SECTION B-B

(BARS AT PIPE SHALL BE SHIFTED OR CUT, AS NECESSARY, TO WITHIN 2" CLEAR DISTANCE OF PIPE)

REINFORCING BAR SCHEDULE											
MARK	NO.	SIZE	TYPE	LENGTH	WEIGHT	MARK	NO.	SIZE	TYPE	LENGTH	WEIGHT
B1	16	#4	STR	8'-10"	94	N9	8	#6	②	12'-0"	144
B2	16	#4	STR	7'-5"	79	N10	8	#6	②	11'-8"	140
						N11	8	#6	②	11'-4"	136
G1	2	#7	STR	29'-8"	121	N12	8	#6	②	11'-0"	132
G2	2	#7	STR	28'-7"	117	N13	8	#6	②	10'-8"	128
						N14	8	#6	②	10'-4"	124
H1	24	#4	①	18'-6"	297	N15	8	#6	②	10'-0"	120
H2	4	#4	①	18'-1"	48	N16	8	#6	②	9'-7"	115
H3	4	#4	①	15'-2"	41	N17	8	#6	②	9'-3"	111
H4	4	#4	①	12'-2"	33						
H5	4	#4	①	9'-3"	25	T1	40	#4	STR	15'-0"	401
H6	4	#4	①	6'-3"	17	T2	20	#4	STR	27'-0"	361
H7	4	#4	①	3'-4"	9	T3	40	#4	③	10'-8"	285
H8	24	#4	①	18'-1"	290						
H9	4	#4	①	17'-8"	47	V1	18	#4	STR	11'-8"	140
H10	4	#4	①	14'-9"	39	V2	4	#4	STR	11'-1"	30
H11	4	#4	①	11'-9"	31	V3	4	#4	STR	10'-9"	29
H12	4	#4	①	8'-10"	24	V4	4	#4	STR	10'-5"	28
H13	4	#4	①	5'-10"	16	V5	4	#4	STR	10'-1"	27
H14	4	#4	①	2'-11"	8	V6	4	#4	STR	9'-9"	26
						V7	4	#4	STR	9'-5"	25
L1	122	#7	②	8'-4"	2,078	V8	4	#4	STR	9'-1"	24
L2	8	#7	STR	4'-3"	69	V9	4	#4	STR	8'-9"	23
L3	8	#7	STR	5'-6"	90	V10	4	#4	STR	8'-5"	22
L4	4	#7	STR	6'-9"	55	V11	4	#4	STR	8'-1"	22
						V12	4	#4	STR	7'-9"	21
N1	30	#6	②	14'-11"	672	V13	4	#4	STR	7'-5"	20
N2	8	#6	②	14'-4"	172	V14	4	#4	STR	7'-1"	19
N3	8	#6	②	14'-0"	168	V15	4	#4	STR	6'-9"	18
N4	8	#6	②	13'-8"	164	V16	4	#4	STR	6'-4"	17
N5	8	#6	②	13'-4"	160	V17	4	#4	STR	6'-0"	16
N6	8	#6	②	13'-0"	156						
N7	8	#6	②	12'-8"	152						
N8	8	#6	②	12'-4"	148						
TOTAL REINFORCING STEEL (LBS.)										8,083	

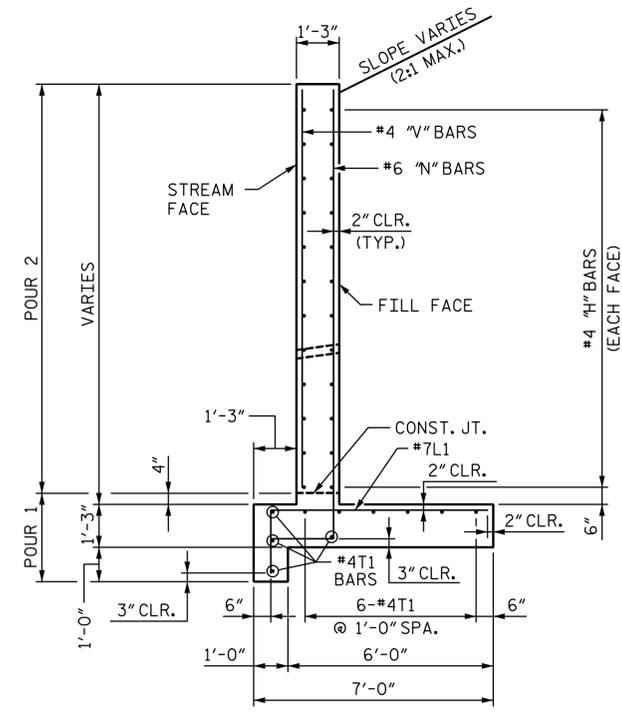
QUANTITIES PER HEADWALL	
	CLASS A CONCRETE (CU. YDS.)
POUR 1	25.1
POUR 2	22.3
TOTAL	47.4



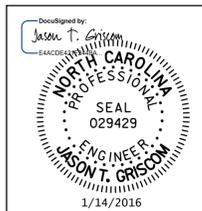
ELEVATION W1

W2 SHOWN, W1 SIMILAR (FOOTING REINFORCEMENT NOT SHOWN FOR CLARITY)

S.F. = STREAM FACE
F.F. = FILL FACE



SECTION C-C



PROJECT NO. 17BP.10.R.69
ANSON COUNTY
STATION: 12+57.50 -L-

SHEET 3 OF 3
STATE OF NORTH CAROLINA
DEPARTMENT OF TRANSPORTATION
RALEIGH
DOUBLE 120" DIA. PIPE
CONCRETE HEADWALL
90° SKEW

DRAWN BY: LEM DATE: 08-14
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2			4			3

